

# Frédéric Burdet

## Developer - Bioinformatician

### Goals :

Combine my knowledge in the IT domain with my experience in Life Sciences (bioinformatics, molecular biology). Imagine and develop novel tools for data analysis and handling. Be up to date with new technologies in informatics and biotechnology. Strengthen my technical skills.

### Information

#### Contact

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#### Personal

Marital status : Single

Citizenship : Swiss

Birth : Born on February 1976 in Lausanne

Military : Relieved of duty

Driving license : Yes

References on demand



### Languages

Fluent English, both spoken and written.  
Good German level but needs practice.

- French : Mother tongue
- English : Fluent, spoken and written
- German : Conversationally good with average writing skills
- Italian : Competent with good oral understanding

### Informatics skills

Life sciences	Bioinformatics	Sequence analysis (DNA and proteins), domains prediction, alignments Informatics modeling of biological data 3D molecular modeling (SwissPDBviewer)
	Molecular Biology	Laboratory methods : Southern, Northern, Western blot, PCR, sequencing, mutagenesis.
	Plant biology	Study of betalain synthesis gene, Diploma
	Immunology	Study of MMTV virus, inoculation of mice, dissection, lymphocytes extraction and sorting, FACS, real time PCR
Analysis and modeling	UML	Databases modeling in UML
	HMM	Hidden Markov Model : Domain prediction on protein sequences (coiled coil domains) implemented in MAMOT software
Statistics and Reporting	R Language	Analysis of matrixes, ROC curves, AUC calculation, graphics making
	Excel	Calculation tables, Formulas, Graphiques, Macros (data extraction)
Languages	Perl	Experienced. Data extraction and sorting from lists of sequences. Cgi Scripts for dynamic web pages
	Java	Servlets to generate dynamic web pages, MySQL access, Applet for image
	PHP	Access and manage MySQL databases, dynamic web pages
	Html	Web pages < from scratch and good knowledge of DreamWeaver CS3
	Visual Basic	Excel Macros, also work with older BASIC versions (PSION, Amiga, ...)
PASCAL	Used for algorithm lessons	
Databases	MySQL	Creation and utilization of MySQL databases Evaluate the needs of future users, coordination
Operating Systems	Windows	Expert user : 98 to Vista
	Linux	Advanced user : Ubuntu and Suse distributions
	MacOS	Average user
Other software	MS Office	Advanced user : Word, Excel, PowerPoint, Access
	Adobe Suite	Photoshop, DreamWeaver, Acrobat
	Adobe Audition	Audio editing

## Experience

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CHUV, microbiology Lausanne	Philippe Hauser's group, collaboration with SIB and Vital-IT From August 2008, part time Bioinformatics on enzymatic pathways and gene prediction in <i>Pneumocystis</i> spp. and other fungi
5D Lausanne	Supervisor in programming and web development From June 2008, part time Updating of my knowledge in PHP, MySQL and Java From March 2008 <ul style="list-style-type: none"><li>• Development of an online sale website, client orders and items on sale management.</li><li>• <a href="http://www.susana-creations.com">www.susana-creations.com</a></li></ul>
Swiss Institute of Bioinformatics Lausanne	Optimization of a prediction algorithm and analysis of results April to September 2007 – Internship <ul style="list-style-type: none"><li>• Prediction of coiled coil domains with a Hidden Markov Model</li><li>• Data extraction from sequences lists with PERL, sorting of useful information</li><li>• Analysis of result matrixes in R, production of analysis scripts</li><li>• Statistic tools: ROC curves, AUC, t-test, graphics</li><li>• Setting-up of an interactive web page in cgi/perl</li></ul>
Informatics Center of Université de Lausanne UNIL, Dorigny	Setting-up of a DataBase for Computer Hardware management May to September 2002 - Graduation project <ul style="list-style-type: none"><li>• Modelisation of a DataBase with UML</li><li>• Hardware management (peripherals, network addresses, ...) and licences</li><li>• Evaluation of the needs of the users : necessary functions presentation</li><li>• DataBase in MySQL, accessed through web pages, html code generated with JAVA servlets</li><li>• Management of user accounts</li></ul>
Collège des Bergières Lausanne	Teaching of scientific subjects August 2001 to July 2003 <ul style="list-style-type: none"><li>• Biology, Chemistry, Physics, Mathematics</li><li>• Test and evaluation of students, level 5<sup>th</sup> to 9<sup>th</sup> year</li></ul>
Université de Lausanne	Research on DOPA dioxygenase of <i>Portulaca grandiflora</i> August 2002 to March 2003 – Graduation project <ul style="list-style-type: none"><li>• Research on a newly discovered pigment synthesis enzyme</li><li>• Biolistics (cell shooting with gold microbeads coated with DNA)</li><li>• Search of homologous sequences, sequencing of neighbor species</li><li>• Multiple alignments with T-Coffee</li><li>• 3D modeling with SwissPDBviewer, prediction of active site</li><li>• Use of molecular biology techniques</li><li>• Macros in Visual Basic in Excel : Importation of non-standard HPLC data (txt files) for graphical analysis</li></ul>
Musée de la Main Lausanne	Scientific animator of a pedagogical exhibition Summer 2000 <ul style="list-style-type: none"><li>• Setting-up of teaching scientific experiments : DNA extraction with dishwashing soap, spinach leaves chromatography, observing the saliva amylases work</li><li>• Presentation of the exhibition to children classes and visitors</li></ul>
Dictagen Epalinges	Laboratory Technician June to December 2000 – student job <ul style="list-style-type: none"><li>• Preparation of amino acid mixes for peptide synthesis</li></ul>
Kiosques Naville / Relay Lausanne	Salesman 1998 to 2000, during the holidays – student job <ul style="list-style-type: none"><li>• Sale, work with customers, organisation of the shop, send back magazines and books</li></ul>
Ringier Romandie Genève	Phone-salesman 1996 to 1998, part-time <ul style="list-style-type: none"><li>• Sale of subscriptions on the phone</li><li>• Learning of sale techniques</li></ul>
Restaurant l'Evidence Genève	Service Summer 1996, student job

## Education

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Biology Diploma Université de Lausanne	2003 - <a href="#">DOPA dioxygenase from <i>Portulaca grandiflora</i></a> Cellular Phytogenetics, prof. J-P. Zryd Study of a newly discovered gene involved in pigment synthesis. Bioinformatics: multiple alignment, 3D modelling. Sequencing, knock-out
Licences en Sciences Informatics and biology Université de Lausanne	2002 Java, PHP, SQL, Visual Basic, Pascal, Algorithmics
ISREC Epalinges	2001 - Prof. J.-P. Kraehenbühl's laboratory, semester project Early infection in mice with MMTV virus, real time PCR, FACS sorting
Université de Lausanne	1997 – 2000 Biology studies – Faculté des Sciences

## Publication

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Christinet, L., Burdet, F. X., Zaiko, M., Hinz, U., Zryd, J.-P. (2004) "[Characterization and Functional Identification of a Novel Plant 4,5-Extradiol Dioxygenase Involved in Betalain Pigment biosynthesis in \*Portulaca grandiflora\*](#)" - *Plant Physiol.* 134: p. 265-274

## Hobby

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Operatic Experience (singer) Concerts in Classical Music	2003 to 2007 Soloist parts in (amongst others) : Amsterdam Concertgebouw, Opéra de Lausanne, several companies in the Netherlands, Switzerland and France
Master degree in Opera Singing Amsterdam Conservatorium	2003 à 2005 Vocal technique, staging, Theatre, Masterclasses, ...
Fine Arts School (ESAV) Geneva	1996-1998 Painting, Video, Multimedia, Sound editing, Photoshop, ...

## Hobbies and personal projects

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Troubleshooting of friends' PC's	Reinstalling, optimization, cleaning, Software and Hardware advise
SmartPhones setting-up	Under Windows Mobile, ROM flashing, Network configuration, multimedia streaming, software settings, synchronization with PC, ...
Creation of games and small softs	Under PSION, Amiga, Smartphone, BASIC language
Sports	Running, Cycling
Visual Arts	Painting, Drawing
Audio and video edition	Video capture to PC, DVD and CD creation (from my concerts and others), MiniDisc recording, ...